

A photograph of a submarine surfacing in the ocean. The submarine's conning tower and part of its hull are visible above the water. A vibrant rainbow is reflected on the wet surface of the submarine's hull. The background shows the blue and white waves of the sea.

Submarine Technology (SUBTECH) Overview

**Prepared for
ONR Naval-Industry R&D Partnership Conference
August 2004**

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SUBTECH/Sub R&D
SEA 073RD**

Outline



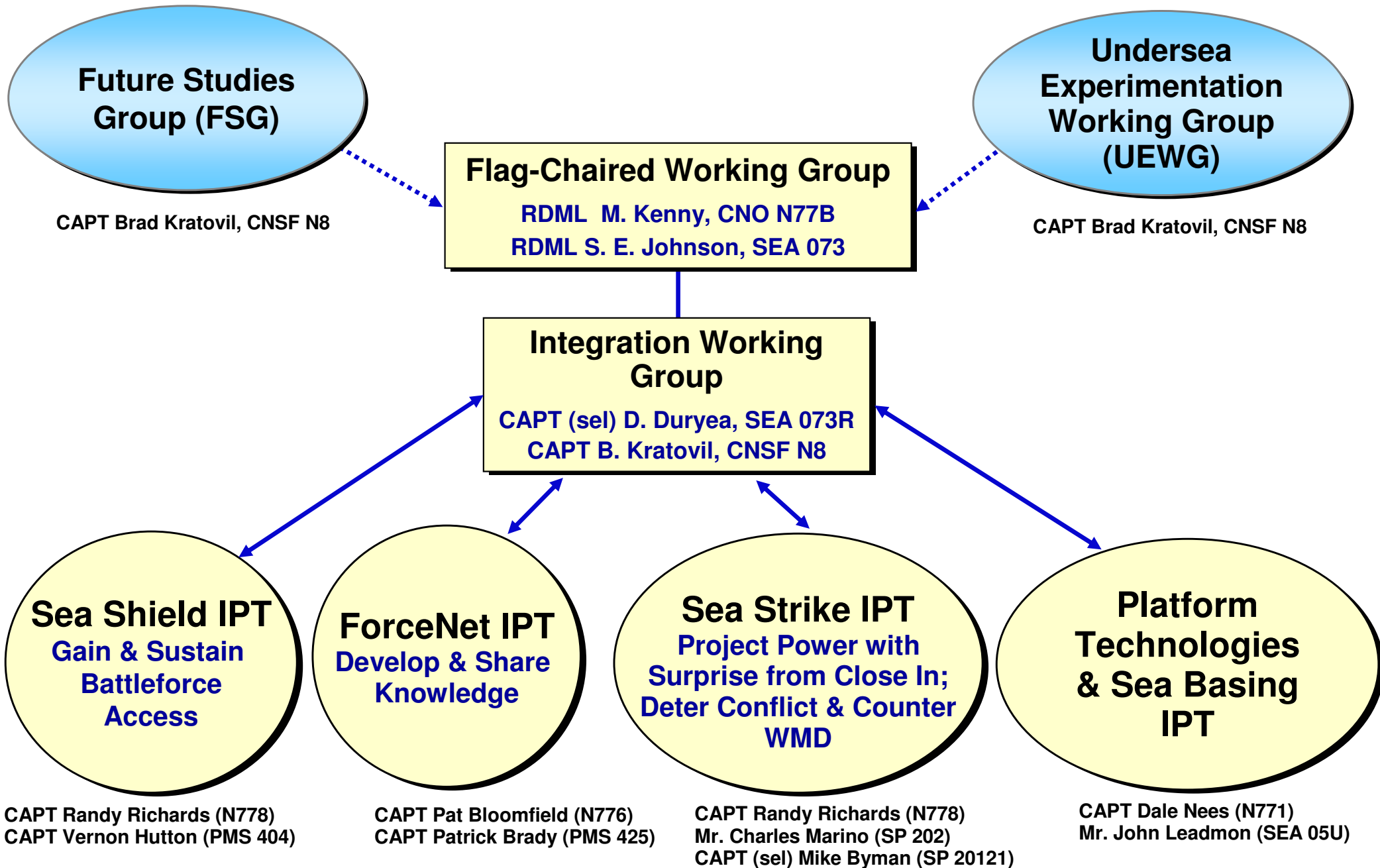
- **SUBTECH Objectives**
- **Background & Vision**
- **Organization**
- **Process & Products**
- **SUBTECH Schedule**
- **Submarine S&T Technology Needs**
- **Summary**

Background & Vision

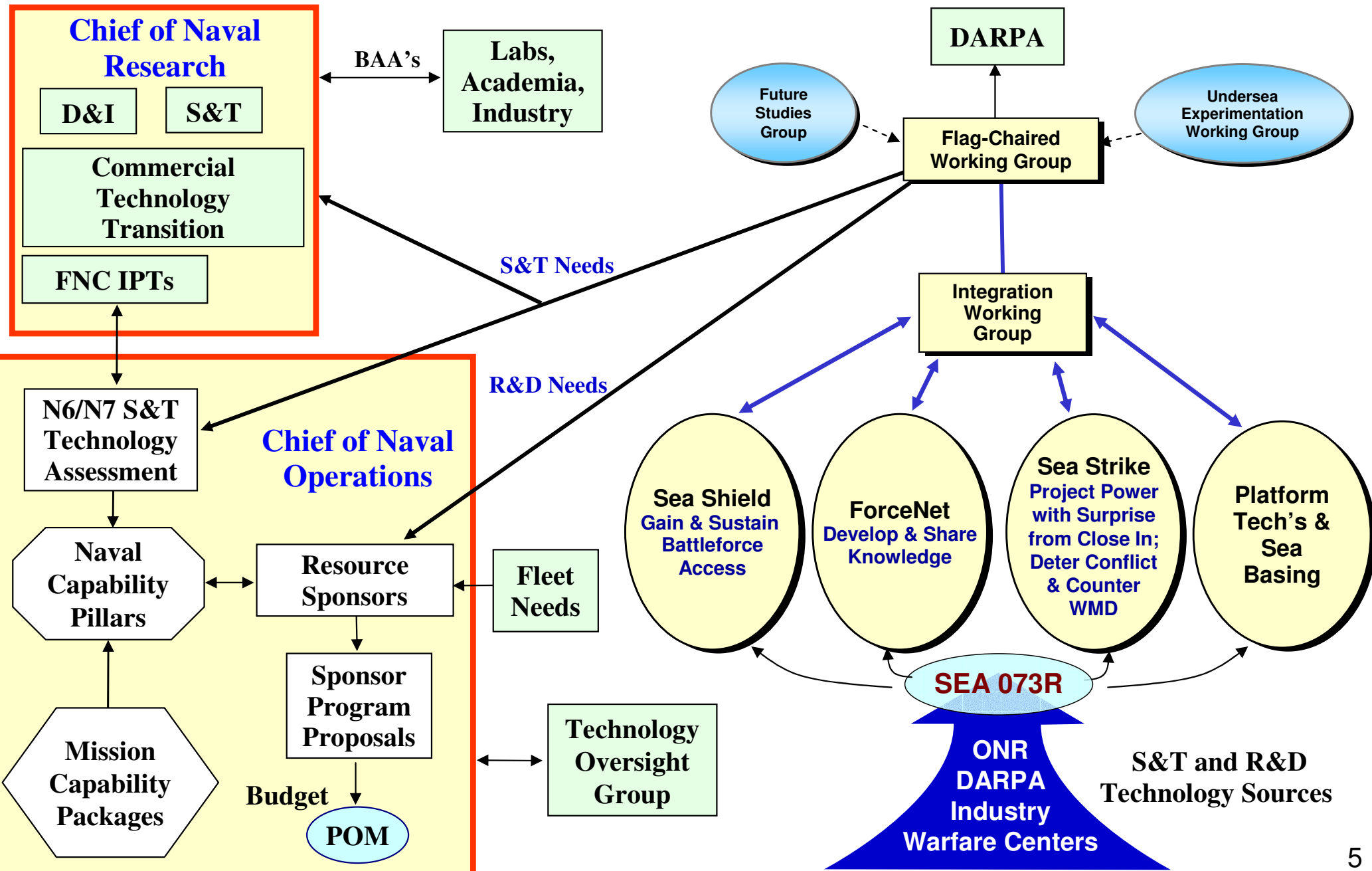
- **SUBTECH was Established in July 1997**
- **Goals**
 - **Develop consensus on Submarine R&D and S&T priorities consistent with achieving the submarine vision**
 - **Provide S&T and R&D recommendations to resource sponsors to influence budget decisions**
 - **Identify technology development efforts in industry and government that can be leveraged**
 - **Publicly articulate the submarine vision and capability needs to influence government and commercial technology development efforts**
- **U.S. Submarine Force Future Capability Vision Signed on 8 July 2004**

Accelerate Technology to the Warfighter to fill Critical Capability Needs

SUBTECH Organization



SUBTECH S&T and R&D Process



SUBTECH Key Products



- **S&T Technology Recommendations to ONR and FNC IPTs**
- **R&D Technology Recommendations to N77**
- **Annual Report to Congress**
- **Technology Roadmaps**

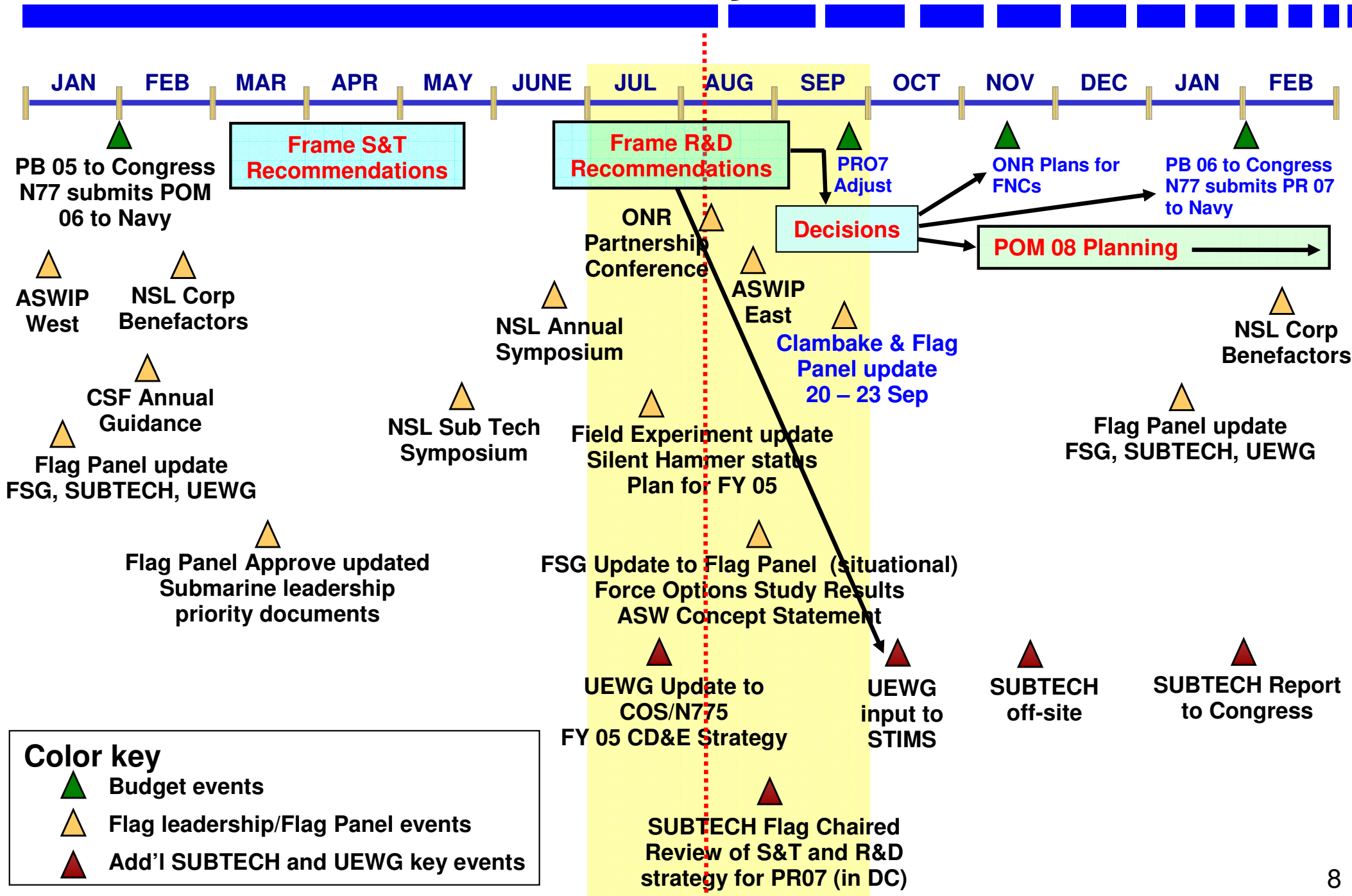
Summary Of S&T Needs for POM 08

(SEA 073 ltr to CNR of 28 July 2004)

- **Platform Technologies (Sea Basing)**
 - **Alternate Submarine Designs, Distributed Propulsion Technologies, and Electric Ship Technologies**
- **ForceNet**
 - **Communications at Speed and Depth, Offboard Sensors, Common Undersea Sensors and Networks, UUV Systems, Onboard Sensors, Information Assurance, and Data Security Devices**
- **Sea Strike**
 - **Universal Encapsulation Technologies, High-Speed Submunition Dispense Technologies, Shock Implosion Technology Tools, Water-Piercing Missile Launcher Technologies, and Adaptive Payloads**
- **Sea Shield**
 - **Platform Self Defense Technologies, Anti-Surface Warfare Kill Technologies, Weapon Performance Technologies, Large Area Search and Cueing, Automation Control Technologies, and Renewable Energy Sources for UUVs**

SUBTECH & Undersea Technology

“Battle Rhythm”



SUBTECH Points of Contact

SUBTECH Integrated Product Team	SUBTECH IPT Co-Chairs	Future Naval Capability (FNC)	Team SUB Applicable FNC Assigned Investigator	ONR FNC POC's
Sea Strike Project Power with Surprise from Close In; Deter Conflict & Counter WMD	CAPT Randy Richards (OPNAV N778), 703-695-9199 Mr. Charlie Marino (SP 202) 202-764-1553 CAPT (sel) Mike Byman (SP 20121) 202-764-0027	Littoral Combat and Power Projection	CAPT William Hilarides (PMS 398), 202-781-1173 CAPT Rick Nicklas (PMS 398E), 202-781-1714	Mr. Barry Blumenthal, ONR 353 703-696-6943
		Time Critical Strike	CAPT Mark Bock (PMS 425), 202-781-2034 CAPT Chris Sullivan (PMA 282), 301-757-5885 CAPT (sel) Mike Byman (SP 20121), 202-764-0027	Mr. Dave Masters, ONR 35 703-696-4206
Sea Shield Gain & Sustain Battleforce Access	CAPT Randy Richards (OPNAV N778), 703-695-9199 CAPT Vernon Hutton (PMS 404) 202-781-3493	Littoral Anti-Submarine Warfare	CAPT Vernon Hutton (PMS 404), 202-781-3493 CDR James Chisum (IWS-5B), 202-781-2063 CAPT (sel) G. Galsgaard (IWS-5A), 202-781-1953	Dr. David Johnson, ONR 32 ASW 703-696-0807
		Organic Mine Countermeasures	CAPT Patrick Seidel (PMW 181), 619-524-7674 CAPT (sel) Jerry Burroughs (PMS 403A), 202-781-2188	Dr. Douglas Todoroff, ONR 321 703-696-2485
		Fleet/Force Protection	CAPT Mark Bock (PMS 415), 202 781-2034	Dr. Joseph Lawrence, ONR 313 703-696-8033
Platform Technologies & Sea Basing	CAPT Dale Nees (OPNAV N771) 703-614-9410 Mr. John Leadmon (SEA 05U) 202-781-3413	Advanced Capability Electric Systems	CAPT David Norris (PMS 350C), 202-781-4235	Dr. Scott Littlefield, ONR 33 703-588-2358
		Total Ownership Cost Reduction	CAPT Anthony Mullarky (PMS 392), 202-781-1275	Dr. Robert Pohanka, ONR 334 703-696-4309
ForceNet Develop & Share Knowledge	CAPT Pat Bloomfield (OPNAV N776) 703-614-9395 CAPT Patrick Brady (PMS 425) 202-781-1117	Autonomous Operations	CAPT Paul Ims (PMS 403), 202-781-4413 CAPT David Portner (PMS 435), 202-781-1311	Mr. Michael Deitchman, ONR 351 703-696-5116
		Knowledge Superiority and Assurance	CAPT Patrick Brady (PMS 425), 202-781-1117 CAPT Frank Unetic (PMW 173), 619-524-7906	Mr. Adrien Eley, ONR 311 703-588-2812

SUBTECH Summary

- **SUBTECH Tasking Status**
 - **Held a SUBTECH off-site 31Mar – 1 Apr 2004**
 - **S&T letter to ONR signed out 28 July 2004**
 - **SUBTECH IPTs need to lobby ONR PMs and FNC IPTs**
 - **Proposed R&D tasking letter to SUBTECH IPTs to be signed soon; advance notice on street via email**
 - **Brief out to IWG by 20 August**
 - **Brief out to FCWG by 7 September**
 - **Brief out to Flag Panel during week of 20 September**
- **Coordinating Efforts with SURFTECH and CARTECH to Maximize Effectiveness in the Navy**
- **Advertising Unmet S&T Needs and Encourage Industry and Academia to Approach the SUBTECH IPTs with Proposed Technology Solutions**



Backups

SUBTECH Objectives

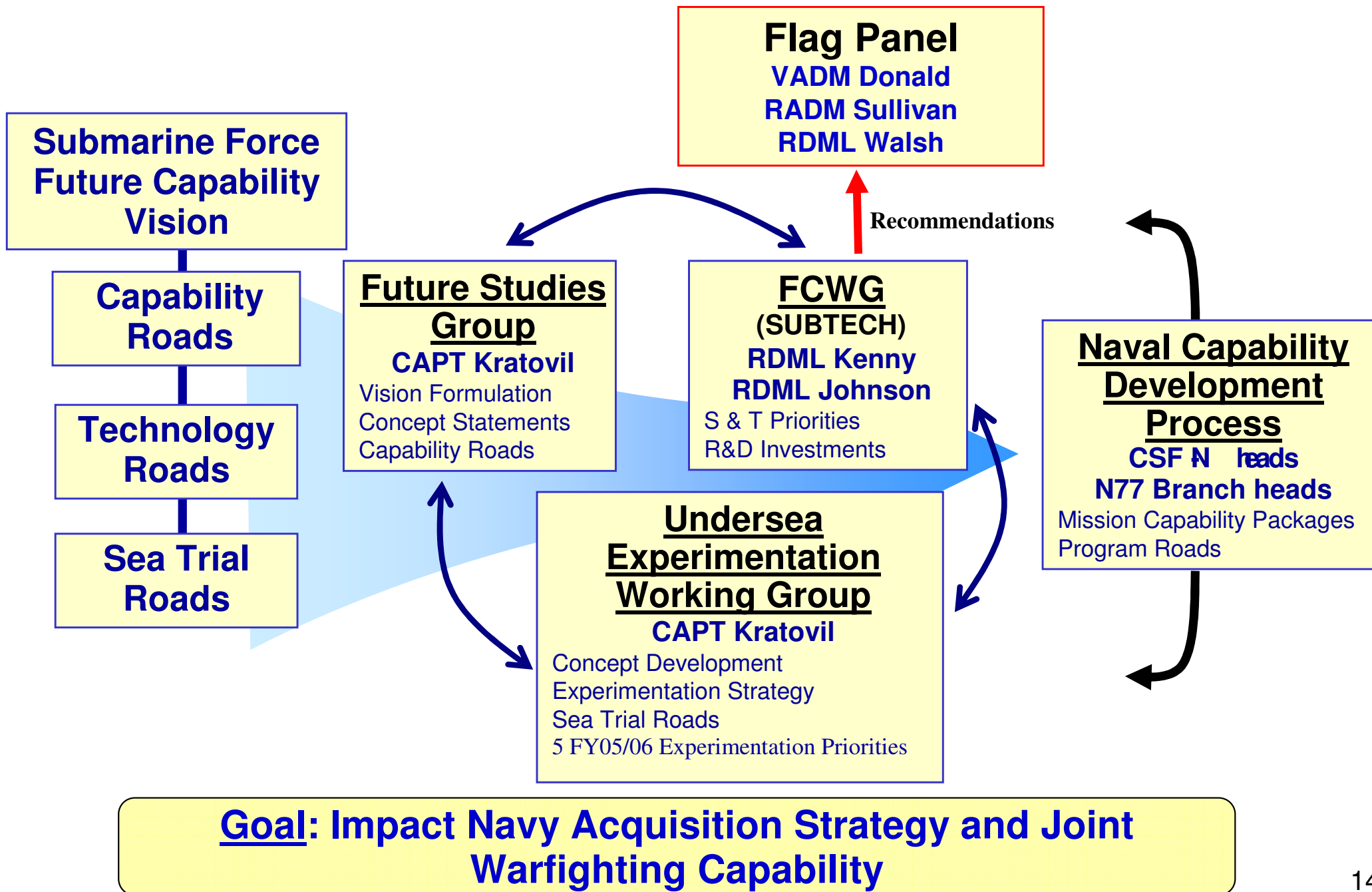
- **Recommend Technology Solutions to ONR & OPNAV**
 - Seek Opportunities with ONR and DARPA
 - Coordinate with Acquisition Managers
- **Strive for Common Technologies Across Sub and Surface Platforms**
- **Recommend Undersea Technologies for Sea Trial Events**
- **Coordinate Technology with SURFTECH & CARTECH**

***Implementing The Submarine Force
Future Capabilities Vision of 8 July 2004***

SUBTECH Phases

- **Two Phases – Supporting Budget Cycle**
 - **S&T Phase (Mar – May)**
 - **Recommended technologies to ONR & N70 should potentially:**
 - **Fill an MCP capability warfighting gap**
 - **Fall under an applicable FNC**
 - **Satisfy an N77 R&D Priority**
 - **Are or will be addressed in an Technology Transition Agreement**
 - **Plan to Transition the Technology to an N77 R&D Program**
 - **Have a demonstration/experiment planned**
 - **R&D Phase (Jun - Nov)**
 - **Recommended technologies to N77 should potentially:**
 - **Concept maturity with respect to the concept development, analysis and documentation required by the Joint Capabilities Integration and Development System (JCIDS) process**
 - **Link to a established Navy requirement**
 - **Be a completed S&T program**
 - **Be a Technical Readiness Level (TRL) 7 or higher**
 - **Have a demonstration/experiment completed or planned**
 - **Be in the POM and/or have President Budget funding planned**

Strategic R&D Planning Elements



11 Future Naval Capabilities 8 Presently of Interest to Submarines

Future Naval Capabilities

